

Photosynthesis vs. Cellular Respiration Review – Please complete all work on separate paper.

Explain why each statement is incorrect by re-writing it as a correct statement; P = photosynthesis, CR = Cellular Respiration

1. P produces CO₂ & CR uses CO₂
2. CR produces O₂ and P uses O₂
3. Only CR uses ETCs to produce H⁺ electrochemical gradients
4. A change in pH level would affect P first and then CR a few days later in a plant
5. Only P relies on H⁺ gradients to function
6. Both generate ATP by oxidative phosphorylation
7. Only P requires a membrane-bound organelle
8. ATP produced in CR is used during P
9. ATP produced in P is used in CR
10. Both require H₂O
11. Both have some reactions occurring in the cytoplasm
12. P requires mitochondria and CR requires chloroplasts
13. Only CR requires electron carriers
14. P produces O₂ and CR produces organic compounds like glucose
15. CR must have evolved before P
16. Anaerobic organisms can use Fermentation, CR and P to make ATP
17. Chemiosmosis results from solar energy in CR and organic molecule reaction in P
18. The thermodynamics for P are: $-\Delta H$, $-\Delta S$, $+\Delta G$
19. The thermodynamics for CR are: $+\Delta H$, $-\Delta S$, $+\Delta G$
20. Plants use P but Animals use CR